Chapter 8 · Introduction to Trigonometry

Part 9 · Spot the Mistake

Each solution below reaches a wrong answer, and exactly one step is to blame. Find the first wrong step and rewrite it correctly. Marking other people's work is the fastest way to stop making their mistakes.

🔍 Spot the Mistake

Identifying opposite and adjacent sides

Step 1. In ΔABC, right-angled at B, for angle A, side BC is the adjacent side.

Step 2. The hypotenuse is always the side facing the right angle, here AC.

Step 3. So $\sin A = \frac{AB}{AC}$.

_____ The first wrong step is Step _____ . What should it say?

_____

🔍 Spot the Mistake

Evaluating $2\tan^2 45° + \cos^2 30° - \sin^2 60°$

Step 1. $\tan 45° = 1$, so $2\tan^2 45° = 2$.

Step 2. $\cos^2 30° - \sin^2 60° = ¿$.

Step 3. So the total is $2 + \frac{3}{4} = \frac{11}{4}$.

_____ The first wrong step is Step _____ . What should it say?

_____

🔍 Spot the Mistake

Using the identity $1 + \tan^2 A = sec^2 A$

Step 1. The identity comes from dividing $AB^2 + BC^2 = AC^2$ by AC^2.

Step 2. It is actually obtained by dividing every term by AB^2.

Step 3. It holds for every value of A from 0° to 90° inclusive.

_____ The first wrong step is Step _____ . What should it say?

_____

You now hold six ratios, one table, and three identities — enough to turn any right triangle into a solvable puzzle of angles and sides. □□